**DIFFERENTIATION USING THE PRODUCT RULE**

The product rule is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Differentiate
2. Differentiate:
3. Differentiate:
4. Differentiate:
5. Differentiate:
6. Differentiate:
7. Differentiate:
8. Differentiate:
9. Differentiate: . Then find the values of x where
10. Differentiate: . Then find the values of x where
11. Find all points (*x*, *y*) on the graph of with tangent lines parallel to the line.

**DIFFERENTIATION USING THE QUOTIENT RULE**

The quotient rule is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Differentiate:
2. Differentiate:
3. Differentiate:
4. Differentiate:
5. Differentiate: . Then evaluate
6. Differentiate:
7. Differentiate:
8. Find the equation of the tangent line to the graph of at *x* = -1
9. Consider the function . Solve for *x* . Solve for *x*.
10. Find all points (*x*, *y*) on the graph of where tangent lines are perpendicular to the line .